

COASTAL FISH AND WILDLIFE RATING FORM

Name of area: **Papscanee Marsh and Creek**

Designated: **November 15, 1987**

Date Revised: **August 15, 2012**

County: **Rensselaer**

Town(s): **East Greenbush, Schodack**

7.5' Quadrangles: **Delmar, East Greenbush**

<u>Assessment Criteria</u>	<u>Score</u>
Ecosystem Rarity (ER) -- the uniqueness of the plant and animal community in the area and the physical, structural and chemical features supporting this community.	
ER Assessment – One of the major freshwater tidal wetland and tributary systems in the upper Hudson River subzone, but rarity is reduced by human disturbance. Geometric Mean: $\sqrt{9} \times \sqrt{16} = 12$	12
Species Vulnerability (SV) – the degree of vulnerability throughout its range in New York State of a species residing in the ecosystem or utilizing the ecosystem for its survival.	
SV Assessment – Bald eagle (T), least bittern (T), American bittern (SC) Additive Division: $25 + 25/2 + 16/4 = 41.5$	41.5
Human Use (HU) -- the conduct of significant, demonstrable commercial, recreational, or educational wildlife-related human use, either consumptive or non-consumptive, in the area or directly dependent upon the area.	
HU Assessment – The marsh provides a variety of fish and wildlife related recreational uses for residents of the Capital District including fishing, waterfowl hunting, trapping and bird watching. Geometric Mean: $\sqrt{4} \times \sqrt{9} = 6$	6
Population Level (PL) – the concentration of a species in the area during its normal, recurring period of occurrence, regardless of the length of that period of occurrence.	
PL Assessment – Concentrations of various protected migratory and nesting birds and coastal migratory fish species uncommon in the ecological subzone. Geometric mean: $\sqrt{4} \times \sqrt{9} = 6$	6
Replaceability (R) – ability to replace the area, either on or off site, with an equivalent replacement for the same fish and wildlife and uses of those same fish and wildlife, for the same users of those fish and wildlife.	
R Assessment – Irreplaceable	1.2
Habitat Index(ER+SV+HU+PL)= 65.5	Significance (HI x R)= 78.6

LOCATION AND DESCRIPTION OF HABITAT

Papscaanee Marsh and Creek is located on the east side of the Hudson River, beginning just south of the City of Rensselaer and extending south along the west side of N.Y.S. Route 9J for approximately four miles. The fish and wildlife habitat is located in the Towns of East Greenbush and Schodack, Rensselaer County (7.5' Quadrangles: Delmar, N.Y.; and East Greenbush, N.Y.).

The Papscaanee Marsh and Creek habitat, encompassing approximately 700 acres, is primarily a floodplain wetland area, encompassing a large tidal creek, emergent marshes, freshwater tributaries, old fields, submerged aquatic vegetation, mainly water celery (*Vallisneria americana*), and young woodlands. The habitat also includes a one-mile segment of the Moordener Kill, which is a medium gradient, warm water stream, with a gravelly substrate and a drainage area of approximately 33 square miles.

Papscaanee Marsh and Creek have been subject to considerable human disturbance as a result of navigation channel construction, agricultural use, nearby commercial and industrial developments, stream channel alterations, and the intrusion of invasive species including common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*) and water chestnut (*Trapa natans*).

FISH AND WILDLIFE VALUES

Papscaanee Creek and its tributaries, especially the Moordener Kill, are important spawning and nursery areas for a variety of coastal migratory fish species such as blueback herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), American eel (*Anguilla rostrata*), and American shad (*Alosa sapidissima*). In addition, the habitat is an important producer of forage fish (killifish, shiners) that are consumed by larger predatory fish species. Many resident estuarine and freshwater fish species are also found here, including white perch (*Morone americana*), white catfish (*Ameiurus catus*), largemouth bass (*Micropterus salmoides*), and smallmouth bass (*Micropterus dolomieu*). The submerged aquatic vegetation located within the habitat provides food for fish, invertebrates and waterfowl as well as refuge for fish and invertebrates.

Papscaanee Marsh is an important resting and feeding area for migratory waterfowl such as American black duck (*Anas rubripes*), mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), and Northern pintail (*Anas acuta*), and is used by limited numbers of waterfowl for nesting. Probable or confirmed breeding bird species in the area include little blue heron (*Egretta caerulea*), green-backed heron (*Butorides virescens*), bald eagle (*Haliaeetus leucocephalus*)(T), northern harrier (*Circus cyaneus*) (T), sharp-shinned hawk (*Accipiter striatus*)(SC), osprey (*Pandion haliaetus*)(SC), least bittern (*Ixobrychus exilis*)(T), king rail (*Rallus elegans*) (T), American bittern (*Botaurus lentiginosus*)(SC), red-headed woodpecker (*Melanerpes erythrocephalus*) (SC), Canada goose (*Branta canadensis*), mallard (*A. platyrhynchos*), wood duck (*A. sponsa*), Virginia rail (*Rallus limicola*), common moorhen (*Gallinula chloropus*), common snipe (*Gallinago gallinago*), spotted sandpiper (*Actitis macularia*), belted kingfisher (*Ceryle alcyon*), marsh wren (*Cistothorus palustris*), swamp sparrow (*Melospiza georgiana*) and many protected passerines.

Papscaanee Marsh and Creek, as well as Moordener Kill, provide recreational and educational opportunities to residents from throughout the Capital District, including Albany, Rensselaer, and Columbia Counties. Waterfowl, hunting, trapping, fishing, and bird watching are all significant recreational uses. However, human use of the area is limited somewhat by the lack of public access facilities.

IMPACT ASSESSMENT

Any activity that would substantially degrade water quality, increase turbidity or temperature, or alter water depths in the littoral zones, wetlands, and streams making up this habitat would result in significant impairment of the habitat. Discharges of stormwater runoff or wastewater containing sediments or chemical pollutants (including fertilizers, herbicides, or insecticides) may result in adverse impacts on the habitat area.

Any physical alteration of the habitat, through dredging, filling, or bulkheading, could result in a direct loss of valuable habitat area and would eliminate productive shallow areas. Elimination of wetlands, through filling or drainage, would result in a direct loss of valuable habitat area. Construction of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously altered by human activity, would result in the loss of productive areas which support the fish and wildlife resources of Papscanee Creek. Construction of structures in areas previously altered may result in a direct loss of valuable habitat. However, alterations in association with habitat restoration, including the re-establishment of secondary channels, may improve habitat conditions.

Substantial alteration of the stream channel, such as impoundments or creation of barriers to fish passage should be prohibited. Impediments to movement and migration of aquatic species and vegetated aquatic communities, whether physical or chemical (e.g., dams, dikes, channelization, bulkheading, filling), should be prohibited. Where appropriate, hydrological modifications (e.g., dams, dikes, channelization, bulkheading, and filling) should be reduced in scale or removed, including the removal of obstructions to fish passage. Habitat disturbances would be most detrimental during bird nesting, and fish spawning and nursery periods, which generally extend from March through August for most species.

Existing areas of natural vegetation bordering aquatic and wetland areas should be maintained and where possible restored to provide bank cover, soil stabilization, maintain or improve water quality and provide buffer areas from development.

The presence of invasive species and the expansion of their ranges within the marsh may result in changes in native plant, vertebrate and invertebrate species composition and abundance. Effective control of invasive plant species, through a variety of means, may improve fish and wildlife species use of the area. Application of herbicides or insecticides along or within the marsh may result in adverse impacts on various fish and wildlife species and should be avoided. However, limited and monitored application of herbicides or pesticides to control invasive species may be beneficial in maintaining habitat for native fish and wildlife species.

Where opportunities exist, appropriate restoration of intertidal and subtidal shallow habitats should be undertaken using the best available science and proper monitoring protocols, in particular, restoration of shallow intertidal secondary channel that formally divided Campbell Island and Papscanee Island; and breach of the Cow Island Dike at the mouth of Papscanee Island. Restoration and enhancement efforts should be monitored, and the associated habitat effects should be reported and evaluated.

Agricultural activities have resulted in habitat losses due to filling or drainage, but could be managed to maintain or enhance certain wildlife species. Development of additional public access to the area may be desirable to allow compatible human uses of the fisheries resources. Human use of the area should be conducted in a manner to avoid impacts.

HABITAT IMPAIRMENT TEST

A **habitat impairment test** must be met for any activity that is subject to consistency review under Federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** that must be met is as follows.

In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:

- destroy the habitat; or,
- significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in applying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;
2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and,
3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

KNOWLEDGABLE CONTACTS

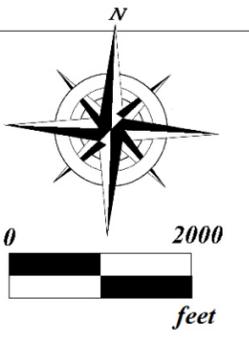
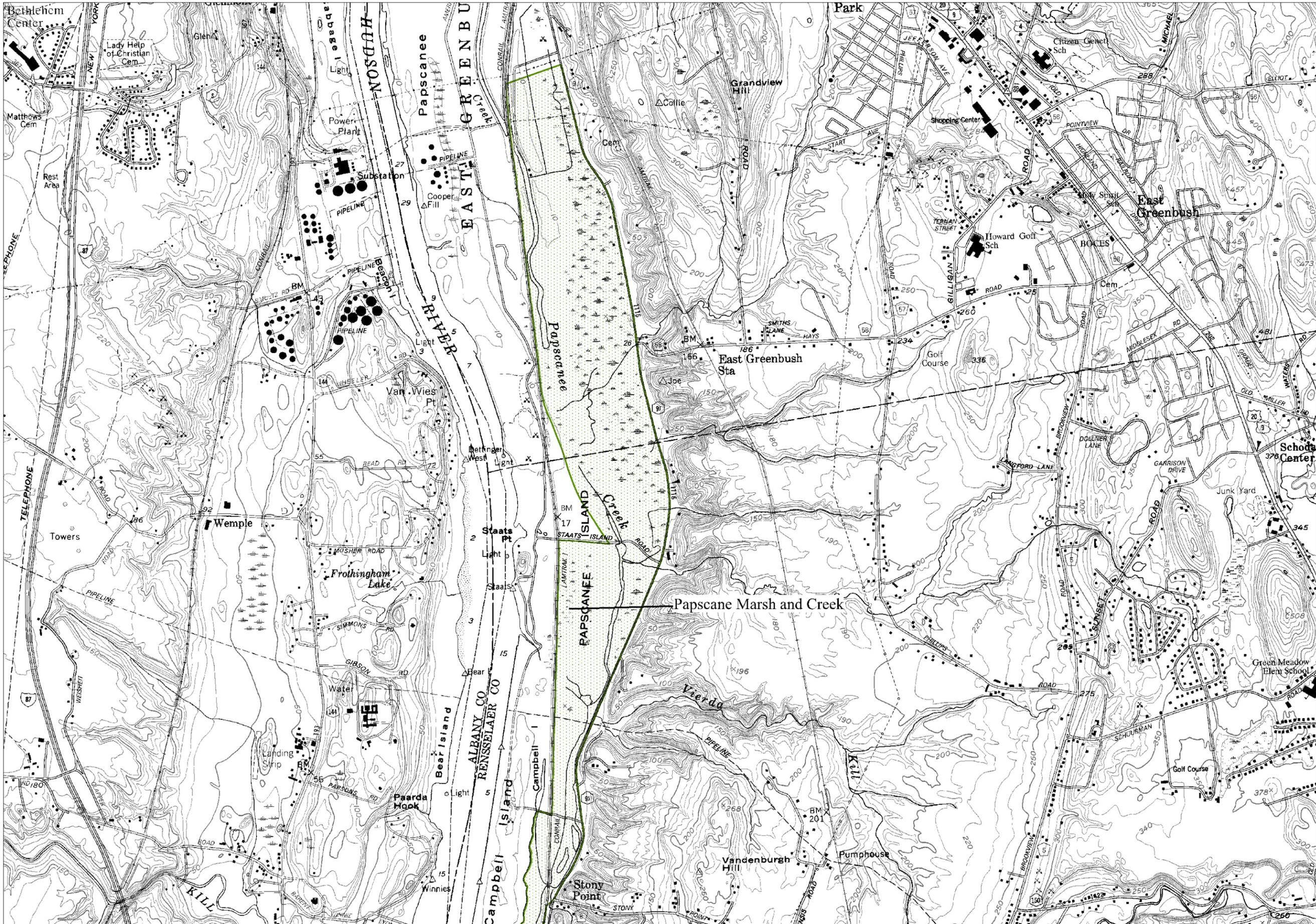
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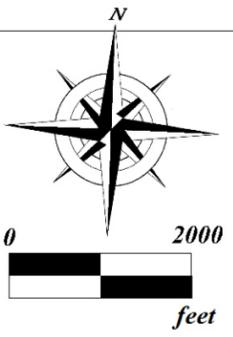
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Significant Coastal Fish and Wildlife Habitats

Papscaene Marsh & Creek (In Part) part 1 of 2





Significant Coastal Fish and Wildlife Habitats

Papscaene Marsh & Creek (In Part) part 2 of 2
 Schad and Schermerhorn Islands (In Part)

